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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/965,312	09/27/2001	Michael J. Melfi	01RE156 REEL:0025	3915

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EXAMINER
MULLINS, BURTON S

ART UNIT	PAPER NUMBER
2834	

DATE MAILED: 03/27/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/965,312	MELFI, MICHAEL J.	
	Examiner	Art Unit	
	Burton S. Mullins	2834	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *06 February 2003* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *2-37* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *2,5-8,11-16,19-25,28,29,32-34 and 37* is/are rejected.

7)☒ Claim(s) *3,4,9,10,17,18,26,27,30,31,35 and 36* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Claim Objections

1. Claim 2 is objected to because of the following informalities: Change "ground member" (line 8) to ---grounded member--- for consistency. Appropriate correction is required.

Response to Amendment

2. The indicated allowability of claim 2-5 and 7-27 is withdrawn in view of the newly discovered reference(s) to Okumura (JP 2000-152564). Rejections based on the newly cited reference(s) follow.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 2, 5-8, 11-13, 22-25, 28-29, 32-34 and 37 are rejected under 35 U.S.C. 102(b) as being anticipated by Okumura (JP 2000-152564). Okumura teaches a "bearing current reducer of a dynamo-electric machine" comprising: a frame 143 (Fig.1); a shaft 152; a rotor assembly 122 mounted on the shaft 152; at least one bearing 125 supporting the shaft 152 in the frame 143; and a capacitance enhancement mechanism comprising annulus rings 1,2,3,4 by which rotor to frame capacitance is increased (abstract), wherein the capacitance enhancement

mechanism comprises a labyrinth, i.e. annulus rings 1,2,3,4, the labyrinth comprising a ground member (fixed rings 1,2 attached to frame 143), a shaft-voltage reducer (rotating rings 3,4 attached to shaft), and one or more air gaps disposed between the grounded members 1,2 and the shaft-voltage reducers 3,4 (in Fig.1, rings 1 and 2 are separated by distance "d" from rings 3 and 4). Regarding claim 5, the ground members 1,2 are "adjacent to the shaft" 152 and the shaft-voltage reducers 3,4 are mounted on the shaft. Regarding claim 6, the common mode voltage on Okumura's shaft would be reduced by a scaling factor determined by, e.g., the distance "d" between the annuli as well as the air gap between the rotor 122 and stator 120 (abstract). Regarding claim 7, the housing 142 is coupled to ground (Fig.7), with the annulus rings 1,2 and 3,4 comprising "enhanced" surface areas with gaps therebetween. Regarding claim 8, the tortuous path formed by the air gap between the annulus rings (Figs.1&6) comprises a "labyrinth". Regarding claim 11, the capacitive enhancement mechanism or annulus rings 1,2,3,4 increases the rotor to frame capacitance, adding to the capacitance between the stator and rotor (abstract). Regarding claims 12 and 32, as with claim 6 above, the scale of common mode voltage reduction would depend on the distance "d" between the annuli. Regarding claim 13, Okamura's device reduces bearing current (abstract). Regarding method claims 22-25, the distance "d" between annuli 1,2,3,4 in Okamura is changed to adjust the difference between the enhanced surface areas to increase rotor shaft to frame capacitance. Regarding claims 33-34, note stator 120 mounted in housing frame 143, with the annulus rings 1,2 and 3,4 comprising "enhanced" surface areas that undergo relative movement, with gaps therebetween. The fixed rings 1,2 form "grounded members", while the rotating rings 3,4 attached to the shaft form "shaft-voltage members". Regarding claim 37, as with claims 6, 12

and 32 above, the scale of common mode voltage reduction would depend on the distance "d" between the annuli.

Claim Rejections - 35 USC § 103

5. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

6. Claims 14-16 and 19-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Busse et al. ("Bearing Currents and Their Relationship to PWM Drives" in view of Okumura. Busse et al. study bearing currents and their relationship to PWM drives. A stator, housing, shaft and rotor assembly coupled to the shaft via bearings are disclosed (Introduction, Fig.6). Busse et al. also disclose common mode voltage produced by the stator (p.247-249).

Busse et al. do not teach "a capacitive enhancement mechanism coupled between the housing and the rotor, the capacitive enhancement mechanism having a capacitor formed by a pair of enhanced surfaces that undergo relative movement."

Okumura discloses a "bearing current reducer of a dynamo-electric machine" including a capacitance enhancement mechanism comprising annulus rings 1,2,3,4 coupled between the housing 143 and the rotor shaft 152, wherein the rings 1,2,3,4 form a pair of "enhanced" surfaces undergoing relative movement. The rings form a capacitor with gaps of distance "d" between the enhanced surfaces (abstract; Fig.1). The fixed rings 1,2 form "grounded members", while the rotating rings 3,4 attached to the shaft form "shaft-voltage members". Okumura's apparatus reduces bearing current (abstract).

It would have been obvious at the time of the invention to modify the PWM drive of Busse et al. and provide a capacitive enhancement mechanism per Okumura since this would have been desirable to reduce bearing current.

Allowable Subject Matter

7. Claims 3-4, 9-10, 17-18, 26-27, 30-31 and 35-36 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Regarding claims 3, 9, 17, 26, 30 and 35, Okumura does not teach or suggest that the one or more gaps "d" are at least partially filled with dielectric material.

Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Burton S. Mullins whose telephone number is 305-7063. The examiner can normally be reached on Monday-Friday, 9 am to 5 pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor Ramirez can be reached on 308-1371. The fax phone numbers for the organization where this application or proceeding is assigned are 305-1341 for regular communications and 305-1341 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 308-0956.

Burton S. Mullins
Primary Examiner
Art Unit 2834

bsm
March 25, 2003